The TRACKER

News from the Environmental Public Health Tracking Program

Keeping Track, Promoting Health

Environmental Health Data Integration Network (EHDIN): Paradise or Promise?

The NH Environmental Public Health Tracking Program (EPHT) is hard at work fulfilling our promise of creating paradise – an environmental public health tracking system for New Hampshire that provides automated access to standardized public health data from the Department of Health and Human Services (DHHS) and environmental data from the Department of Environmental Services (DES), in one place on the web. We have yet to realize that promise, but we're getting closer and on **February 17, 2009**, we'll launch the NH EPHT system, which we named, with paradise in mind, the Environmental Health Data Integration Network, or EHDIN. EHDIN will be located on the NH EPHT Program website, **www.ephtracking.nh.gov**, which will also launch on that date.

At launch, users of EHDIN will be able to access data about asthma and acute myocardial infarction (heart attack) hospitalizations, but ultimately, EHDIN will also provide data for cancer, birth defects, vital statistics, key contaminants in public drinking water, air pollution, and childhood blood lead levels. Data provided by EHDIN will be stripped of personally identifiable information and suppressed to ensure confi-

(**EHDIN,** continued on page 2)

Photo courtesy of NH Department of Cultural Resources

CDC's Environmental Public Health Tracking Network: Ready to Launch in February

Environmental exposures may play a significant role in the development of many chronic diseases, including cancer and heart disease, the top two causes of premature death in our country, but we don't know for sure because we lack the basic information needed to link environmental hazards and environmentally related diseases.[1]

In 2000, the Pew Environmental Health Commission exposed this "environmental health gap" and called for the establishment of a national Environmental Public Health Tracking (EPHT) Network to respond to and eventually reduce the burden of these diseases on the nation's population. In 2003, the Centers for Disease Control and Prevention (CDC) initiated the national EPHT Program and awarded funds to 17 state and

(**EPHT Network,** continued on page 2)

"We can track flu, West Nile virus, and mad cow disease but not enough of the chronic illnesses that are the biggest killers of Americans, because we just don't have enough of that basic information."

Tom Burke, Ph.D., Professor, Co-director,
Risk Services and Public Policy Institute,
Johns Hopkins University

(EHDIN, continued from page 1)

dentiality. Secure data will be available only to authorized users via a pin/password login.

EHDIN will also feature analysis, visualization and reporting functions that allow users to create a dashboard of maps, graphs, and charts of selected data. Users will also be able to view multiple displays of data side by side, drill down levels of data, and export data in usable formats such as Excel. (See page 3 for more information about EHDIN)

EHDIN will help agencies and others perform key functions, including monitor and distribute information about environmental hazards and disease trends; advance research on possible linkages between environmental hazards and disease; and develop, implement, and evaluate regulatory and public health actions to control environmentally-related diseases.

(**EPHT Network,** continued from page 1)

local health departments, including New Hampshire, to build a national EPHT network. Their mission: to build state and local systems that feed standardized data from environmental hazard monitoring, human exposure surveillance, and health effects surveillance systems to the national EPHT Network. Five years in the making, the EPHT Network will launch on **February 24, 2009** and will be located on the CDC website, www.cdc.gov/ephtracking.

"A successful tracking system will provide our citizens with critical information on the threats to their health posed by the environment and how well we, as a nation, a state, or a community, are dealing with those threats."

Michael McGeenhin, Ph.D., Director,
Division of Environmental Hazards and Health Effects,
National Center for Environmental Health, CDC

The national EPHT Network will focus on health data that show the rates of certain chronic diseases or conditions, hazard data that show levels of pollutants that may be found in the environment, and exposure data that show the amount of certain chemicals found inside people's bodies. At launch, the EPHT Network will provide nationally consistent data measures for asthma and myocardial infarction (heart attack) hospitalizations, cancer, vital statistics, key contaminants in public drinking water, and air pollution levels. By 2010, the EPHT Network will also track birth defects and childhood blood lead levels. New measures will be added as determined by CDC and grantees.

The national EPHT Network will use this information to monitor broad environmental public health trends that are relevant across the entire country, while state networks will monitor state and community-level trends. The EPHT Network will assist public health practitioners in identifying and targeting effective public health interventions, advance public health research, and help local, state and federal agencies and policymakers to develop and evaluate actions that improve public health.

1. McGeehin, Michael. *National Environmental Public Health Tracking Program: Providing Data for Sound Public Health Decisions*. J Public Health Management Practice, 2008, 14(6), 505-506

ABOUT US

The EPHT Program analyzes environmental and public health data related to issues that may impact NH communities and provides information to environmental and public health professionals, legislators, advocacy groups, researchers and the public to facilitate better decision making, evaluation, and policy development.

MISSION

Our mission is to develop a secure network for the collection, access, analysis, and dissemination of environmental public health data and information; to guide policy, practice, and other actions toward improving the health of New Hampshire residents; and to foster collaboration among the state's environmental and public health partners.

VISION

Our vision is for New Hampshire to be a state where information on environmental health is available to all citizens in a rapid, simple, and high quality manner to support an environment of wellness consisting of an abundance of clean air, clean water, and healthy buildings.

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EHDIN Data: FAQs

What data will be available?

Data available on EHDIN will include asthma and myocardial infarction hospitalizations, cancer, births, birth defects, vital statistics, childhood blood lead levels, ozone and particulate matter (PM2.5) in ambient air, and arsenic, disinfection by-products, and nitrates and nitrites in public drinking water. Other measures will be identified and added annually.

Will personally identifiable data be protected?

Data provided to the public by EHDIN will be appropriately de-identified and aggregated and will conform to strict confidentiality and suppression rules as determined by the Office of Health Statistics and Data Management, Division of Public Health Services. Secure data will be accessible only to authorized users via a pin/password login.

How will EHDIN data be displayed?

EHDIN is using Cognos business intelligence software to display a dashboard of indicator measures presented as a chart, map or table. Public users will have the ability to select from a predetermined set of indicator measures while authorized users will have the ability to perform ad-hoc queries. Dashboards for specific content areas will be preloaded with specific reports that highlight important aspects of the data. The user can then drill into any of the reports/displays to investigate and discover data on their own. The displays will be accompanied by text specific to the report or dashboard.

Nationally consistent EPHT measures for NH will also be available on EHDIN. Currently they include asthma and acute myocardial infarction hospitalizations, and arsenic, disinfection by-products, nitrates and nitrites in public drinking water. These measures are available on HealthWRQS at http://nhhealthwrqs.org.

How will this data be used?

Data provided by EHDIN will be accessible to researchers, public health and environmental practitioners, policy makers, and the public. Data can be used by local and state health departments, physicians and other public health officials to analyze trends over time, identify high-risk groups, target effective public health and environmental interventions, and advance public health research. Information from EHDIN can also be used by policymakers to guide public health legislation and help the public understand indicators of environmental public health in their communities. Data provided to the public will help support informed decision making for improved health of individuals, families and communities.

Photo courtesy of CDC EPHT Program

"We need to get tracking results in front of people in a very usable way, not only on a national level, but by state and locality as well."

Howard Frumkin, M.D., Dr.P.H., Director, National Center for Environmental Health and the Agency for Toxic Substances and Disease Registry, CDC

DID YOU KNOW?

Chronic illnesses are responsible for 70% of deaths in the U.S. Environmental exposures may play a role in the development or exacerbation of many of them.

TURTLE TRACKS

Notes from the EPHT Manager's Desk

Why a turtle? Well, all good things take time and the launch of our state EPHT system is taking a little longer than expected. We're not quite there yet, but it's still a good opportunity to stick our neck out and check in with our friends on some important progress.

As New Hampshire turns colder, our staff have pulled back inside to turn up the heat on tracking environmental hazards and disease. But as an environmental/public health/IT initiative that spans across agencies, our success relies on the cooperation of multiple state and national partners. On the federal front, the CDC's National Center for Environmental Health continues to guide and fund our tracking efforts. On the home front, NH DES staff is working diligently to help us get original source data for drinking water, outdoor air, and radon in homes. And we continue to work closely with NH DHHS administrators to obtain hospital discharge records and build a new data mart for better storage and rapid reporting. The new DPHS Bureau of Public Health Informatics (BPHI) is helping us package and ship our data over a secure network to CDC. And, of course, no IT project would be complete without the ever-steady hand of NH DoIT to guide our network development, testing and production into a final web-based system. A special thanks to all our partners for keeping us on track during these formative years.

Tracking Milestones

A few important milestones have been celebrated this year in the development of EPHT "nationally consistent data measures" (NCDM) that can be compared across towns, counties and states. In May we completed our first set of state-level NCDMs for asthma and acute myocardial infarction (heart attack) hospitalizations and key contaminants in public drinking water. In August we sent our first shipment of hospital and drinking water data to the CDC via a secure system called the Public Health Information Network (PHIN). In October, we posted a set of summary tables and charts of NH NCDMs to the new public HealthWRQS website (www.nhhealthwrqs.org).

Next Steps in Tracking

The core activities of 2009 will include completing the network, adding content, and crafting outreach messages. With January being Radon Action Month, we'll share data and distribute the radon-lung cancer issue brief. We'll also be getting EHDIN ready for user testing in preparation for the February launch. In April we plan to complete a drinking water data mart to better store and report on key water contaminants. And in May and June we'll focus on developing community environmental health profiles for NH counties and major cities. Beyond June we'll begin to capture, measure, and report on lead poisoning and birth defects data in relation to environmental exposures.

So until next time, stick your neck out and stay on track.

Matthew Cahillane

The Tracker: Keeping You Up-to-Date on EPHT

Welcome to the first issue of The Tracker, a quarterly newsletter from the NH Environmental Public Health Tracking (EPHT) Program. Our goal is to keep you informed about environmental public health topics that are of interest to you and provide you with relevant data and resources for improving environmental public health in your communities. We will also bring you up-to-date on the activities of the EPHT program, the CDC's EPHT Program, and current events in environmental public health.

To meet these goals, we need to hear from you. If you have feedback, questions, or ideas about our program, website, system, or newsletter, please pass them on. You can email Laura Holmes at LHolmes@dhhs.state.nh.us or call 603-271-1604.

If you did not receive The Tracker directly but would like to, please send an e-mail to Laura Holmes and include your name, organization, and contact information and we'll put you on our e-mailing list.

In Our Next Issue...

We'll highlight the response we receive from the launch of the EPHT website, EHDIN, and the national EPHT Network. We'll feature an issue brief about how heart attacks are measured and the environmental factors that may influence them in New Hampshire. And we'll continue to update you on the progress we make toward building an environmental public health tracking system that meets your needs.

EPHT Calendar of Events

- NH EPHT indicators available on NH HealthWRQS, www.NHHealthwrqs.org
- January — National Radon Action Month and National Birth Defects Prevention Month
- February — National Cancer Prevention Month and American Heart Month
- **February 17** — Launch of the EPHT Program website (www.ephtracking.nh.gov) and EHDIN
- **February 24** — Launch of the national EPHT Tracking Network (www.cdc.gov/ephtracking)
- March — National Colorectal Cancer Awareness Month
- Spring issue of the Tracker… watch for it in your inbox

RADON AND LUNG CANCER Fact Sheet

January is RADON Action Month

Using the Data to Inform Communities

Radon is easy to forget or ignore. We don't notice it with our senses of smell, touch, taste, sight or hearing. Yet this naturally-occurring gas is radioactive and the second leading cause of lung cancer in the United States.[1]

Radon is the second leading cause of lung cancer after cigarette smoking.

As an environmental hazard of concern to communities in New Hampshire, radon was made a priority area by the Environmental Public Health Tracking (EPHT) Program for public health awareness and policy action. To better understand the relationship between radon and lung cancer, the EPHT Program conducted an ecological level descriptive study of available data related to radon and lung cancer. The following is a summary of important findings that may affect you.

Background

Radon is a naturally occurring radioactive gas that emanates from soil and bedrock, such as granite, that seeps into homes through cracks in the foundation. As the "Granite State," New Hampshire has a higher than average radon exposure potential. In the U.S., the average level of indoor radon is 1.25 picocuries per liter (pCi/L), but in New Hampshire it is estimated to be 1.8 pCi/L. The Environmental Protection Agency (EPA) has established 4.0 pCi/L as the level at which action should be taken to reduce radon to less than 2 pCi/L. Of the New Hampshire homes that have been tested for radon through the state radon program, more than 30% were at levels above the EPA action level of 4 pCi/L.

Cigarette smoking plays a significant role in radon-induced lung cancer risk. In the U.S., it is estimated that radon causes approximately 14% of all lung cancer deaths, but for smokers, the risk of radon-induced lung cancer is especially high. Specifically, the lung cancer risk for individuals who have never smoked, and with no radon exposure, is only 0.4%, but at 20 pCi/L of lifetime radon exposure, the risk increases to 3.6%. Lifetime smokers with no radon exposure have a 10% chance of dying from lung cancer. At 8 pCi/L of radon, that risk increases to 22%. Because of radon's potential impact to human health, it is important that New Hampshire residents test their homes for radon and take corrective action when necessary.

Reduce radon levels in your home to less than 2 pCi/L.

(**Radon,** continued on page 6)

It is important that NH residents test their homes for radon and take corrective action when necessary.

DID YOU KNOW?

Radon causes 14-20% of lung cancer cases in New Hampshire

Methods

In this study, the EPHT Program linked and analyzed radon test data from DES, incident cancer cases from the NH Cancer Registry, and birth records from NH Vital Records. The study employed data maintained and accessed at the case level (Cancer registry, death files, radon household database), town level (population and socio-economic status data from the US Census), and county level (census migration data, EPA nationwide radon data). The descriptive analysis included the following: 1) geographic distribution of lung cancer in the state (by county and by HSA); 2) geographic distribution of radon in the state (by county, by HSA, and by town); 3) interstate migration by EPA-rated radon risk level (by county); 4) socio-economic status, maternal smoking, and other estimates of tobacco use (by HSA and by town).

Summary Results

Radon results:

- 15,000 radon tests between 1987 and 2002 were analyzed. Figure 1 illustrates the percentage of homes in each town with test results above 4 pCi/L.
- In general, southeastern and eastern regions in NH have the greatest number of communities with a high percentage of homes with elevated radon levels.
- Rockingham, Carroll and Coos counties, in particular, contain several communities in which more than half of the homes tested have radon levels above 4 pCi/L.

Lung cancer results:

- Lung cancer rates for these three town groupings were compared for New Hampshire residents age 65+ for the period 1987-2001.
- The male lung cancer rate in high-risk radon towns was 12% higher than in low-risk radon towns.
- The female lung cancer rate in high-risk radon towns was 29% higher than in low-risk towns.
- The differences between these rates reveal a statistically-significant association between the distribution of radon in the state and the incidence of lung cancer, especially for females.

Note: It is important to note that even in the lowest radon risk communities (in white), the chance of living in a home with elevated radon can be as high as 10%. However, levels of radon in New Hampshire vary from town to town, street to street, and even house to house. Also, this study did not take into account the actual level of radon exposure experienced by individuals who developed lung cancer, nor did it control for other factors related to lung cancer.

1. EPA New England, Region 1. Greenbytes: January 10, 2006 Edition

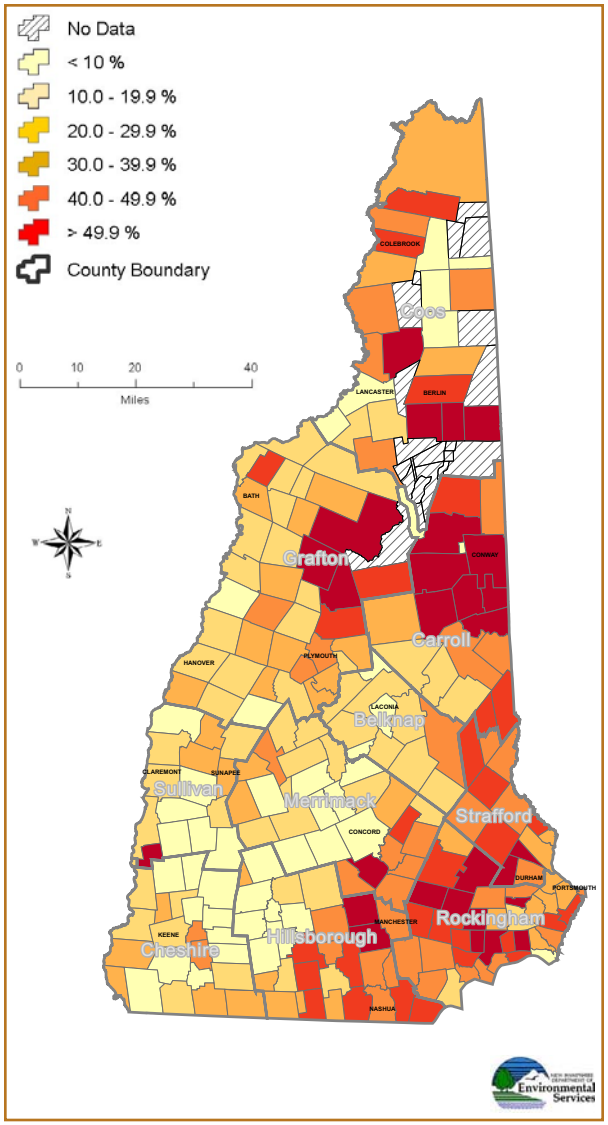

Figure 1: Percent of Tested Homes Above the Radon Action Level of 4 pCi/L from 15,000 radon tests between 1987 and 2002

"NH's radon database contains results for more than 24,000 homes. Approximately 1/3 of those test results exceed the EPA action level of 4 pCi/L."

David Chase, PhD, Manager,
Radon Program
NH Department of Environmental Services